

Tick IPM Outreach and Research Activities, NYS IPM Program, 2017

Project Leader(s):

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Cooperators:

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Abstract:

Ticks and tick-borne diseases have become a significant public health issue in the Northeastern United States, including New York. With Lyme disease representing the number one vector-borne pathogen in the US, researchers are working to better understand the biology and ecology of ticks, while the medical community works toward improving diagnostic techniques and treatment. Despite these efforts, individuals continue to encounter ticks that may harbor pathogens. Therefore, starting in 2014 the New York State IPM Program established a new priority to *develop, confirm, and/or promote methods for reducing the impact of ticks in community settings in a measureable way*. By providing education about tick biology and ecology, combined with recommendations for personal protection, the goal is to reduce human interactions with ticks. To this end, the Community IPM program has engaged diverse audiences in learning about tick and host management, conducted research, assisted other organizations in disseminating their message, and applied for and received monies to create tick outreach campaign, Don't Get Ticked, NY, that will be launched in 2018.



Background and Justification:

Ticks are ectoparasites that require a blood meal at each stage of their development. After taking a blood meal, fully engorged ticks will fall off the host, molt to the next stage and subsequently search for their next host. This lifestyle offers opportunities for pathogens to be transferred from one host to another by the tick. Indeed, ticks are known vectors of multiple pathogens that affect humans and other animals.

Lyme disease is the most commonly reported vector-borne disease in the United States, and in 2015 it was the sixth most commonly reported Nationally Notifiable Disease (www.cdc.gov/lyme/stats/). Lyme disease is caused by a bacterial infection, which is transmitted to humans only by the blacklegged tick. Each year approximately 30,000 individuals are diagnosed with Lyme disease, but evidence suggests that only 1 in 10 cases of Lyme are reported. This suggests annual infection of 300,000 individuals with Lyme disease.

Unfortunately, blacklegged ticks and Lyme disease are only one story. Research in New York's Hudson Valley, as well as other parts of the country, has shown that blacklegged ticks can also carry anaplasmosis, babesiosis, and Powassan disease, and that ticks can be co-infected to transmit multiple pathogens. Furthermore, New York is host to the lone star tick and the American dog tick, which also carry and transmit human pathogens. Tick paralysis and alpha-gal allergy are nonpathogenic risks from tick bites, with the former being potentially fatal.

Combatting human, companion and farm animal exposure to tick-borne diseases centers on an IPM approach to reducing tick and host habitat, managing the ticks and their hosts, and educating individuals on how to protect themselves and their companion/farm animals.

Objectives:

- Reduce human exposure to tick-borne illnesses.
- Educate homeowners, landscape and turfgrass professionals, school grounds managers, parks officials, and municipalities about the importance of monitoring and habitat modification as a first step in tick management.
- Promote IPM, including monitoring and personal protection, as best management practices for avoiding ticks and tick-borne disease.

Activities:

Collaboration and Information Sharing

Community IPM staff represented the NYS IPM Program on different committees that address ticks and tick-borne disease issues.

- **The Lyme Advisory Board** - Matt Frye serves as the Secretary for The Lyme Advisory Board, which meets quarterly and provides insight and information to Senator Sue Serino, Senate Chair of the Task Force on Lyme and Tick-Borne Diseases in New York State. As a group, the Advisory Board has discussed ongoing projects, upcoming events, proposed legislation and budgetary items.
 - With collaboration from Julie Suarez (Associate Dean of Governmental and Community Relations at Cornell University) and staff from Senator Sue Serino's office, Joellen Lampman and I were able to suggest changes that removed misleading and/or inaccurate information on a pamphlet about ticks and tick-borne disease. The Lyme Advisory Board provided additional suggestions of science-based information.
 - In June 2017, Matt Frye and Joellen Lampman met with the Senate Task Force on Lyme and Tick-borne Disease in Albany. They spoke about common tick misconceptions, and personal protective steps that individuals can take to reduce their exposure to ticks. This was done in the context of outreach and education that we put forth in a funding proposal.



- The Community IPM team was invited to expand a proposal on tick outreach and education in the Hudson Valley to include outreach and education on Long Island. Confirmation was received on 6/22/2017 that the proposal was funded.
 - In June 2017, Matt participated in an educational forum hosted by New York State Senator Sue Serino in Hyde Park, NY. Speakers used a “myth-busting” approach to education, which was very well received. A recording of the forum is available: <http://bit.ly/2xQgB1Z>.
 - In July 2017, the office of Senator Kirsten Gillibrand arranged a press conference at Seatuck Environmental Center (Oakdale, NY) to announce her support for continuing funding for Lyme disease research and health care. Jody Gangloff-Kaufmann spoke about the research and outreach programs happening in NY as a result of funding from the state and federal government. <http://www.fios1news.com/longisland/sen-gillibrand-researchers-push-for-federal-funding-to-fight-against-ticks#.Wc6R4ltSzIV>
 - In July 2017, Matt participated in a tick and Lyme forum hosted by NYS Senator Chris Jacobs in Orchard Park, NY (<http://bit.ly/2wo90Eb>). The event was covered by Buffalo’s NPR News Station in two separate articles <http://bit.ly/2vTiBTJ>, <http://bit.ly/2x0ppTI>.
 - In August 2017, Matt provided testimony at a public hearing held jointly by the Senate Task Force on Lyme and Tick-Borne Disease and the Senate Standing Committee on Health (<http://bit.ly/2xPeIT>). His testimony identified the problem with ticks from the perspective of the land-grant institution in NY, and possible solutions that include research and education. Dr. Frye’s oral testimony can be viewed here: <http://bit.ly/2xL9oQc>. The hearing was also mentioned in CALS Field Notes as a result of this hearing: <http://us15.campaign-archive1.com/?u=7c080c2d90b51e1bb068e976f&id=be382d82b8&e=7ae23f64a4>
 - In September 2017, Matt participated in a tick-borne disease forum in Canandaigua, NY for NYS Senator Pam Helming (<http://bit.ly/2hBzrUo>). Dr. Amara Dunn from the NYS IPM Program was available to provide outreach and education at the event: <http://bit.ly/2xGBb2t>.
- **Public Tick IPM Working Group** – Community IPM staff have joined more than fifty individuals from federal, state and local governments, Land Grant Universities, non-governmental organizations and others to participate in a forum for communication, networking and collaboration.
 - The group has identified a list of priorities for research, management, education, and regulation. The priorities can be found at <https://tickipmwg.wordpress.com/priorities>.
 - The group has planned a Tick IPM Symposium that will take place in March 2018 in Baltimore, MD in conjunction with the International IPM Symposium.

- **Northeast Center of Excellence in Vector-Borne Disease at Cornell University:**
<http://neregionalvectorcenter.com/people> - Jody Gangloff-Kaufmann and Matt Frye are affiliate members.
- **Don't Get Ticked, NY** – The goal of this outreach program is to target information and messaging for audiences with the greatest risk of encountering ticks. We will utilize social marketing techniques, hands-on educational tools and provide easy to understand, practical suggestions to avoid ticks and tick habitat. In 2017, a name for the campaign was finalized and a logo developed.



Social Media, Blogs and Articles

The NYS IPM Facebook page has over 700 followers, and information about ticks is regularly posted to the site. In 2017, 67 tick-related posts reached over 20,586 individuals. Six tick-specific articles were posted to the NYS IPM Program blogs.

- Woodsen, Mary. "[Tick Trickery and Lyme Disease: the Great Imitator? Sometimes.](#)" *ThinkIPM Blog*, New York State Integrated Pest Management Program, Cornell University, 16 June, 2017. Web.
- Olmstead, Dan. "[Getting ticked? Bummed about Lyme disease? You're not alone](#)" *Your NEWA Blog*, New York State Integrated Pest Management Program, Cornell University, 23 August, 2017. Web.
- Woodsen, Mary. "[Getting ticked? Bummed about Lyme disease? You're not alone](#)" *ThinkIPM Blog*, New York State Integrated Pest Management Program, Cornell University, 24 August, 2017. Web.
- Frye, Matt. "[Lyme Disease by the Numbers](#)" *ThinkIPM Blog*, New York State IPM Program Blog. Cornell University, 5 October 2017. Web.
- Frye, Matt. "[Steer Clear of Ticks and the Diseases they Carry – The IPM Way](#)" *ThinkIPM Blog*, New York State IPM Program Blog. Cornell University, 10 October 2017. Web.
 - A combination of these two articles appeared in New York Berry News Volume 16(3): [Lyme Disease: Ticks and the Diseases they Carry](#).
- Woodsen, Mary. "[It's \(still\) tick season — and will be evermore](#)" *ThinkIPM Blog*, New York State Integrated Pest Management Program, Cornell University, 1 November, 2017. Web.
- Quoted in PETMD article, What Does a Tick Look Like?
www.petmd.com/dog/slideshows/what-does-tick-look
- Quoted in Catster Magazine article, The Regional Guide to Fleas and Ticks on Cats
www.catster.com/cat-health-care/the-regional-guide-to-fleas-and-ticks-on-cats
- Quoted in Dogster Magazine article, The Regional Guide to Fleas and Ticks on Dogs
www.dogster.com/dog-health-care/the-regional-guide-to-fleas-and-ticks-on-dogs
- Quoted in Consumer Reports article, Tickproof Your Yard without Spraying:
<https://www.consumerreports.org/pest-control/tick-proof-your-yard-without-spraying/>

- Updated [Understanding and Managing Ticks – A Guide for Schools, Child Care and Camps](#) fact sheet.

Image Gallery on Flickr

A Flickr album dedicated to ticks currently has 66 pictures showing close-ups of ticks, monitoring techniques, tick habitat, and educational materials as well as 4 videos. Some of the more popular photos in this album have over 2,200 views. URL:

www.flickr.com/photos/99758165@N06/albums/72157645579157057

NYS IPM Staff Visits

When requested, NYS IPM Staff visit properties to inspect for ticks and provide tick management recommendations. The Child Safe Playing Fields Act requires that schools and child care centers obtain an emergency exemption in order to apply a pesticide and the NY Department of Health has requested monitoring to ensure that ticks are present.

- Jody Gangloff-Kaufmann performed two tick inspections at school properties in Port Jefferson, NY. Parents are worried that kids are picking up ticks on the school grounds and athletic fields. It was determined that mainly the athletic fields are free of ticks, but the wood lined edges are a higher risk area. This school also has walking trails and wooded areas where ticks were found. Fred Koelbel is advising the school community to avoid field edges and wooded areas to avoid ticks.
- Joellen Lampman visited the Bethlehem School District after they requested help with its infestation of ticks. She met with the school nurse and building and grounds staff to develop a plan for assessing the different properties and educating all the students. During the assessments, ticks were found along the edges of the playing fields adjacent to the woods and wetland as well as along the path to the high ropes course. It was recommended they restrict students from the parts of the playground that are too close to the wetland. They also decided that the best way to reach all the students was to have the physical education teachers conduct the training, so train-the-trainer seminars were conducted for them.
- On 10/4/2017, Jody Gangloff-Kaufmann and Matt Frye visited three parks (county and state) on Long Island to collect ticks for our outreach program. Despite spending considerable time in potentially tick-infested habitats, we recovered a total of only 5 ticks. However, while attending meetings in Albany, NY (10/18-19/2017), over 100 ticks were collected in one hour of dragging. These ticks will be placed in vials of hand sanitizer to help individuals learn tick identification.



Research

Mulch Mowing - In an effort to reduce costs on waste management, several municipalities in Westchester County are promoting efforts such as the “Love ‘Em and Leave ‘Em” initiative, which encourages homeowners to mulch fall leaves in place. With this push to “leave them on the lawn,” questions have been raised about the effect this practice may have on tick populations. Therefore, this project is surveying lawns for ticks and testing a subset for the presence of pathogens affecting humans. Tick populations were evaluated with tick drags on fourteen plots at twelve sites (two sites had two plots each). Sites include eight home lawns and four public parks in Westchester County, NY. Five plots have been mulch-mowed for 1-3 years, four have been mulch-mowed for 4-7 years, and five plots have had leaves removed in the fall. In 2017, volunteers were secured that allowed each site to be dragged for ticks two time per week for five weeks in the spring and eight weeks in the autumn. Collected ticks were identified to species and life stage and specimens were sent to the NYS Veterinary Diagnostic Laboratory. There is ongoing discussion that the three-year project, scheduled to be completed in 2017, will continue through 2018.

IPM Staff Presentations

Date	Location (County)	Conference/Meeting Name	Presentation Title	Contact Hours
4/5/2017	Rensselaer (Rensselaer)	Staff training	Keeping Away from Ticks	10
4/6/2017	Oneonta (Otsego)	Pest Management for Today's Schools	Tenets of School IPM	9.5
4/7/2017	Oneonta (Otsego)	Pest Management for Today's Schools	Pest Management for Today's Schools	28.5
4/12/2017	Delmar (Albany)	Elsmere Elementary Earth Day	Ticks	52.5
4/24/2017	Albany (Albany)	NYS Senate Earth Day	Ticks and Other Creepy Crawlies Table	1.6
5/5/2017	Victor (Ontario)	Burrough Audubon Nature Club meeting	Protecting Yourself from Ticks & Tick-borne Disease	25
5/12/2017	New Hartford (Oneida)	Pest Management for Today's Schools	Tenets of School IPM	10
5/12/2017	New Hartford (Oneida)	Pest Management for Today's Schools	Pest Management for Today's Schools	42.75
5/16/2017	Delmar (Albany)	Bethlehem CSD Meeting	Tick Assessment and Education	5
5/22/2017	Delmar (Albany)	Bethlehem CSD Meeting	Tick Assessment and Education	5
5/23/2017	Delmar (Albany)	Bethlehem CSD Meeting	Tick Assessment and Education	6
5/25/2017	Plattsburgh (Clinton)	CVES BOCES school facilities managers	School IPM	8.25
6/6/2017	Glenmont (Albany)	Glenmont Abbey Village Residents Meeting	Keep Ticks Away	20
6/27/2017	Mahopac (Putnam)	IPM Workshop for Safe Playing Fields	Tick IPM	17.5

6/28/2017	Hyde Park (Dutchess)	Think you Know Ticks? Think Again!	Debunking Tick Myths	109.5
7/14/2017	Guilderland (Albany)	Butterfly Station Docent Training	Ticks – Avoiding the Bite	35
7/24/2017	Orchard Park (Erie)	Tick Forum	How to Identify, Avoid and Remove Ticks	25
8/1/2017	Guilderland (Albany)	Butterfly Station Docent + Public Training	Ticks – Avoiding the Bite	31
8/3/2017	Coxsackie (Greene)	IPM Workshop for Safe Playing Fields	Tick IPM	19
8/8/2017	Seneca Falls (Seneca)	Empire Farm Days	Tick Table	33
8/10/2017	Glastonbury, CT	CT School IPM Meeting	Tick IPM	75
8/15-20/17	Altamont (Albany)	Altamont Fair	IPM Table	100
9/16/2017	Delmar (Albany)	Fall Festival	Tick Table	300
9/26/2017	Canandaigua (Ontario)	Tick Forum	Debunking Tick Myths	50
10/5/17	Caledonia (Livingston)	Farm Discovery Days	Recognizing and Avoiding Ticks	10
11/8/2017	Voorheesville (Albany)	CCE Albany Staff Meeting	Stop the Bite! Ticks and IPM	18.5
11/9/2017	Fairfield, CT	MetGCSA Fall Seminar	Don't Get Ticked! Understanding and Avoiding Ticks and Tick-Borne Disease	55
11/14/2017	White Plains (Westchester)	Downstate Recreation Conference	Understanding & Avoiding Ticks – Know Your Risks	10.35
11/15/2017	Ithaca (Tompkins)	Agriculture, Food, & Environmental Systems In-service	NYS IPM Program Tick Research & Outreach	52.5
11/16/2017	Rochester (Monroe)	Turf & Grounds Expo	Tick Treatments: Getting the Most Out of Private Control Programs While Protecting Water Quality	21.7
11/29/2017	Voorheesville (Albany)	CCE Albany Master Gardener Training	Stop the Bite! Ticks and IPM	70
12/5/2017	Geneva (Seneca)	Turf Team Meeting	NSY IPM Program Tick Research & Outreach	6
TOTAL				1263.15

Results and discussion:

Ticks and tick-borne disease represent an emerging issue in the northeastern United States. At present, the medical community is divided on several issues that relate to tick-borne disease, from diagnosis to treatment and the possibility of long-term effects from infection. While the NYS IPM Program is not equipped to address these issues, our staff members are able to assist individuals in preventing encounters with ticks and reducing the impacts of encounters that do occur. Any effort to prevent tick encounters can be seen as a way to avoid any of the current complications posed by the divided medical community.

Prevention can be achieved through education, and members of the NYS IPM Program have endeavored to provide education through many channels. This includes partnering with state and local organizations, offering lectures, and creating and disseminating information on social media. In 2017, the NYS IPM Program reached more than 1,200 people through in-person

presentations, 20,586 individuals through Facebook posts, and thousands of individuals through other social media on tick-related topics. Presentations were held in 14 counties and Connecticut.

IPM staff also engaged in research to help if the risk of encountering a tick in one's property can be impacted by mulching leaves vs. removing them on lawns.

Mulch mowing Study

Due to higher tick number across NY and the increase in sampling days, collection numbers were higher in 2017 than previous years, but still too low to determine statistical difference between the treatment plots: 28 ticks collected between April 26 and June 23 and five collected between October 3 and November 29. The most important finding of this study is the presence of ticks in lawns, where many believe they are safe. We have been and will continue to use this information in outreach efforts.

The Community IPM Program will continue to provide education and outreach related to tick identification and risk management in 2017.

Samples of resources developed:

Flickr Tick Album: <http://tinyurl.com/j5xludt>

Facebook Page: <https://www.facebook.com/NYSIPM>